

MEMBRACIDAE OF CUBA.

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This is the second of a series of papers on the Homoptera of Cuba. The specimens have been collected by the junior author and his associates. The Membracidae of Cuba have been neglected by the students of this family; for as far as our records show, only ten species have been described by previous workers from Cuba. Ranked according to the time that they were described these species are as follows: *Membracis fasciata* described in 1798 by Fabricius. In 1846 Fairmaire in his *Revue des Membracides* described three species from Cuba: *Centrotus poeyi*, *Centrotus havanensis*, and *Centrotus flavidus*. In 1857 Guérin-Ménéville in de la Sagra's *Histoire de l'Île de Cuba* described one new species, *Hoplophora fairmairii*, and redescribed Fairmaire's three species listed above. He also listed *Ceresa uniformis* Fairmaire from Cuba. In 1869 Stål assigned *fasciatus* Fabricius and *flavidus* Fairmaire to his genus *Monobelus* and described a new species, *lateralis* from Cuba. In the same year, in his *Bidrag till Membracidernas Kannedom*, Stål described the genus *Goniolomus* for the new species *tricorniger* from Cuba. He also described the new species *Stictocephala rotundata* from Cuba for the species that had been previously listed as *Ceresa uniformis* Fairmaire by Guérin-Ménéville. In 1894 Fowler described *Enchotype coccinna* from Cuba and in 1907 Baker described *Darnoides semicrema*. The synonymy of these species is dealt with below.

We recognize nine of these species as distinct, and include records of three species previously recorded from Florida. In addition we have two new genera and nine new species. These results will indicate how inadequately the Membracid fauna of Cuba is known.

Subfamily Smiliinae.

Genus *Micrutalis*.

The species of this genus are very variable in color and form, and while we have a limited number of specimens from Cuba, these specimens simply confirm this generalization. The lateral lobe-like extensions of the prothorax between the eyes and the base of the wings are very constant in size and shape, in the limited series before us. We believe, therefore, that these structures

furnish reliable characters for specific determinations in this troublesome genus.

Micrutalis calva Say.

There are four specimens: one from Santiago de las Vegas, December 31; one from Camagüey, July 30; one from Manzanillo, July 31, and one from Pico Turquino, July 22, which agree in all essential characters with the common *calva* of the United States. In addition to these typical specimens, there are three specimens which are nearly uniform pale clear yellow, with eyes darker, and usually a few blackish spots on pronotum and legs. These forms cannot be distinguished structurally from *calva*, and appear to be merely a color variety of that species. In addition to the localities mentioned above, specimens of this pale variety are at hand from L. de Ariguamavo, October 15.

Brachytalis gen. n.

This genus is closely related to *Acutalis* Fairmaire but the venation of the wings is entirely different and the pronotum is much shorter, not reaching the apex of the abdomen. It is also closely allied to *Trachytalis* Fowler, but its face is very much broader; the pronotum is smooth and shiny and much shorter than in that genus, and the wing venation is slightly different.

Head broad, with the eyes nearly as broad as the pronotum across the humeral angles; face broad and short, about twice as broad as long; ocelli near the posterior border and about equidistant from each other, and the eyes. Pronotum broad, depressed, smooth and shining, short, barely reaching the apex of the clavus; humeral horns short, blunt, nearly rectilinear; lateral lobes prominent, the margins reflexed dorsad; median carina of the pronotum scarcely indicated. Legs simple, posterior tarsi longest. Tegmina semiopaque, venation somewhat obscure. A single discoidal area from which the apical cells radiate; the apical cells five, the third not stylate.

Type of Genus *Brachytalis fuscus* n. sp.

Brachytalis fuscus n. sp. (Figs. 7, 8.)

The large species of the genus, with a very much depressed pronotum and a general fuscous color.

Head broad and short, smooth and shiny; antennae short, the basal segments almost concealed by the ledges; clypeus flat, nearly as broad as long; mouth parts reaching the middle coxae; general color of the head pale fuscous; the anterior margin with a blackish stripe, eyes reddish. Pronotum broad, much depressed, smooth and shiny, with obscure punctures which are more prominent caudad; humeral angles very obtuse, rounded at the apex; lateral lobes elongate, tongue-like, the apex directed caudad, and reflexed, apex of the pronotum reaching the apex of the clavus; general color of the pronotum fuscous with a broad pale yellow band across the middle, anterior margin next to the head with a narrow blackish band. Wings semiopaque, roughened, venation obscure; claval veins and costal margins punctate, general color of the wings fuscous. Whole venter including coxa and trochanters blackish, rest of the legs fuscous, with the knees, apex of the tibia and tarsi blackish.

Length to apex of tegmina ♀ 3.53, ♂ 3.07; to the apex of the pronotum ♀ 2.61, ♂ 2.15; width across the humeral angles ♀ 1.76, ♂ 1.41.

Holotype ♀ Pico Turquino, July 20, 1922, 5,000 feet. S. C. Bruner and C. H. Ballou. Allotype ♂ Sierra Maestra, July 10 to 20, C. H. Ballou and S. C. Bruner, about 4,500 feet. Paratypes one ♀ Pico Turquino, July 20, 1922, 5,000 feet, S. C. Bruner and C. H. Ballou. One ♀ Sierra Maestra, July 10 to 20, C. H. Ballou and S. C. Bruner, about 4,500 feet.

The specimens from Sierra Maestra are pale golden in color without the characteristic markings, but structurally we have not been able to distinguish them.

Brachyталis fuscoalіs n. sp.

This is a more depressed and more slender species than *fuscus*, with fuscous colored wings, and distinct lateral lobes.

Head broad, short; strongly prolonged anteriorly, and recurved. Pronotum narrow, gradually attenuated to a slender apex which reaches to slightly beyond the end of clavus; humeral angles much less produced than in *fuscus*; lateral lobes strongly produced, strongly recurved without an impressed line along the anterior margin; pronotum with a few impressed points caudad; general color black, the apex fuscous. Entire tegmina fuscous, the venation darker and a little more distinct than is characteristic for the genus. Legs

uniformly reddish brown. Abdomen blackish, shading to reddish brown along the apical margin of each segment.

Length to apex of tegmina 3.07; length to apex of pronotum 2.15.

Holotype ♂ Sierra Maestra, July 10 to 20, 1922, C. H. Ballou and S. C. Bruner; above 3,000 feet.

Stictocephala rotundata Stå. (Figs. 13, 14.)

This species seems to be fairly common in Cuba. Specimens are at hand from Santiago de las Vegas, Miranda and Nagua Oriente. Specimens have been taken in January, February, April, July and August, October, and December.

This is a small species with a well elevated pronotum. The humeral angles are scarcely produced, and the lateral carinae of the metopidium meet at about the middle. The face is somewhat elongated, being slightly more than one-half as long as the width between the eyes; clypeus scarcely produced. Color of head, prothorax, leg and abdomen nearly uniform. Pronotum in fresher specimens obscurely spotted with greenish.

Genus *Idioderma* Van Duzee.

This genus was described from Florida for two species, *Idioderma virescens* Van Duzee and *Idioderma varia* Van Duzee. We have typical specimens of *virescens* from Santiago de las Vegas taken in July, August and September, and from Bolondrón, P. de Guanahacabibes, and we have also a single female specimen of *Idioderma varia* from Santiago de las Vegas, taken from spider web, October 1. This specimen differs slightly from the original description in the distribution of the color markings, otherwise it seems to be identical.

Subfamily *Hoplophorinae*.

Genus *Enchotypa* Stål.

Only three species have been described for this genus. *Hoplophora fairmairii* Guérin is the type. Both Goding and Fowler spell the name of this genus *Enchotype*, but the name was spelled originally *Enchotypa*, and the original spelling should be retained.

Enchotypa fairmairii Guérin. (Figs. 10, 11.)

This species seems to be fairly constant in all its characters. Specimens are at hand from Havana, Santiago de las Vegas and Camagüey.

Enchotypha concinna Fowler. (Fig. 12.)

This species was described from specimens with short, broad pronotal horns. We have two specimens from Santiago de las Vegas which agree in every respect with the original description. We have a strong suspicion, however, that this is merely a variety of typical *fairmairii*, but since there are no intermediate forms, we will keep this species separate.

Subfamily **Centrotinae.**Genus **Orthobelus** Stål.

In this genus we place the *Centrotus havanensis* Fairm. and *Centrotus poeyi* Fairm.

Orthobelus havanensis Fairm. (Figs. 16, 17.)

This is one of the largest species of Membracids from Cuba. Its conspicuous bluish black color, white pleural pieces, white scutellum and creamy basal wing fascia will readily distinguish it. Specimens are at hand from Nagua and Camagüey.

Orthobelus poeyi Fairm.

This species was originally described from Cuba, but as far as our records show, has not been recognized since. We have a single specimen from Hoyo Colorado, Havana Province, which agrees in every respect with Fairmaire's short description. It is certainly very close to *havanensis*. It differs, however, in being longer, and more slender. The color is reddish brown, instead of bluish black. The lateral horns are longer and broader at the base, not so much recurved; the posterior border of the lateral horns is provided with a series of small sawtooth-like projections. The posterior process of the pronotum more definitely sinuate, and more decurved. We strongly suspect that this is merely a variety of *havanensis*, but more specimens need to be available before placing it as a synonym of that species.

Goniolomus tricorniger Stål. (Figs. 21, 22.)

This is a very abundant and apparently quite variable species, being especially variable as to the size and shape of the lateral and dorsal horns, and as the color. Typical specimens have acute lateral horns, slender acute dorsal horns with most of the thorax, excepting the horns yellowish testaceous; at the other end of the series are forms with obtuse lateral horns which do not taper and

are wider near the apex than at the base. In these forms the dorsal horn is short, and broad at the base and the general color is blackish fuscous. Intermediate forms can be found, however. Specimens are at hand from Camagüey, July 15, 25, 30, and 31.

Genus **Nessorhinus** A. & S.

Two species have been described previously for this genus, both from Porto Rico. We describe below a single species of this interesting genus from Cuba.

Amyot and Serville describe the anterior horn as deeply grooved ("Ce prolongement creusé en gouttière en dessous et horizontal"), but in one or two of the specimens before us the apical portion of this horn is made up of two separate prolongations which are not closely appressed along the median line. Close examination under the microscope shows that in most of the specimens these prolongations are so closely appressed as to appear as a single prolongation with a median groove, but they are actually double in all cases.

Nessorhinus gracilis n. sp. (Figs. 2, 3.)

This species differs from *Nessorhinus vulpes* A. and S. chiefly by the more slender anterior process of the pronotum with more slender lateral processes and more elongate dorsal process and a more slender posterior process.

Head strongly deflexed; clypeus in the same plane as the vertex; antennal ledges small; antennal flagellum elongate; proboscis reaching the posterior coxae; general color of the head rufous. Pronotum densely and uniformly punctate; anterior process elongate; basal width equalling one-half the width of the vertex, apical two-thirds made up of two separate processes, which are strongly carinate dorsad and ventrad, and weakly carinate laterad, closely appressed medially and gradually tapering to obtuse apices; lateral horns triangular, acuminate flattened, carinate dorsad; dorsal horn elongate, compressed, broadly rounded apically, slightly curved caudad, the anterior margin carinate, posterior margin bicarinate; posterior process elongate, slender, deflexed, following the contour of the wing, nearly attaining the apex of the abdomen; whole surface of the prothorax uniformly and minutely punctate; general color rufous, the posterior process yellowish testaceous and the horns blackish. Scutellum barely indicated externally. Tegmina semiopaque

blackish fuscous, veins rufous. Legs and venter fuscous, densely clothed with golden pile.

Length, apex of anterior process to apex of tegmina ♀ 8.1 mm.; ♂ 6.3; width across lateral processes ♀ 4.6, ♂ 3.5.

Holotype ♀ Camagüey, July 24, 1923, J. Acuña. Allotype ♂ Camagüey, July 31, 1923, J. Acuña. Paratypes one ♂ Camagüey, July 26, 1923; two ♀ ♀ Camagüey, July 27, 1923; six ♀ ♀ and two ♂ ♂ Camagüey, July 30, 1923.

Genus *Monobelus*.

This is apparently the most abundant genus of Membracidae in Cuba. The species are for the most part small in size, and might readily be confused with species of the genus *Acutalis* as far as general appearances are concerned. The scutellum is exposed, however, and the venation is entirely distinct.

Monobelus flavidus Fairmaire. (Fig. 1.)

= *Darnoides semicrema* Baker.

This is the smallest species of the genus from Cuba, rather variable in size, and rather broad for its length. Specimens are at hand from Santiago de las Vegas, January and July, from Nagua, July 7, 1922; from Taco Taco, April 1 and 6, 1922, and from Candeleró. One of the specimens from Nagua and one from Taco Taco have the posterior processes bright grass green, instead of yellowish as in the other specimens. This may be the color characteristic of the living specimens. Nymphs are at hand from Candeleró. We believe that this is the species re-described as *Darnoides semicrema* by Baker, as his description agrees in most respects but he apparently failed to note the narrowly exposed scutellum.

Monobelus fasciatus Fabricius.

This species is about the same length as *M. flavidus* but is much more slender. Some of the specimens are uniformly black, while others have a faint yellow stripe along the lateral margins of the prothorax. Specimens are at hand from Pico Turquino, July 20, 4,500 to 5,000 feet, S. C. Bruner and C. H. Ballou, and from Sierra Maestra, July 10 and 20, 3,500 to 4,000 feet, on Palma Mocha Mountain.

Monobelus laterialis Stål.

This is the largest of the previously described species, and is readily distinguished by the distinctly fusco-punctate posterior

process. In some of the specimens before us, the lateral margin of the front is yellow, as described by Stål, and in other specimens the front is uniformly black, or nearly uniformly black, with a short pale yellow stripe next the eye. One specimen has the anterior margin of the prothorax with a broad pale yellow band. Specimens are at hand from Camagüey, July 15, 1923, on *Misan-teca trianda* Mez, and from Bolondrón.

Monobelus turquinensis n. sp.

This is the largest species of the genus, being longer than *M. lateralis*. It is of uniform blackish color with deep fuscous wings, with the prothorax more depressed than in *lateralis*.

Face broad, transverse, impressions faintly indicated; uniformly black with pale lateral margins. Pronotum much depressed with the posterior process slightly more slender than in *lateralis*, nearly as in *fasciatus*; uniformly black, with the humeral angles faintly yellow, minutely punctured anteriorly, faintly punctured caudad, the median carina strongly elevated caudad; the posterior process with evident lateral carina, from apex to the apex of the scutellum. Scutellum evident, strongly punctured, black, the apex faintly yellow. Tegmina strongly infuscated, the veins mostly blackish, basal fascia only faintly indicated. Venter and legs chiefly black.

Length to apex of tegmina ♂ 5.84, ♀ 6.77; length to apex of pronotum ♂ 4.61, ♀ 5.38.

Holotype ♂, Taco Taco, April 6, 1922, S. C. Bruner and C. H. Ballou. Allotype ♀, Pico Turquino, July 20, 1922, 5,550 feet, S. C. Bruner and C. H. Ballou.

Monobelus niger n. sp. Fig. 9.

This is another large species of uniformly blackish color with the posterior process strongly compressed, strongly elevated and deeply impressed either side behind the scutellum.

Face elongate, not twice as broad as long, clypeus prominent, anterior margin of the face broadly rounded; eyes prominent. Pronotum strongly elevated, humeral angles conspicuous, but obtuse, posterior process distinctly depressed, strongly elevated above the scutellum into an obscure crest which is distinctly impressed either side behind the scutellum; apex of the posterior process with distinct lateral carinae; general color of the pronotum black, with irregular obscure yellow markings. Tegmina opaque, black-

ish. Most of the cells clear yellow centrally. Venter and legs black, the legs rather slender.

Length to apex of tegmina ♀ 6.77, ♂ 5.07.

Holotype ♀, Camagüey, July 15, 1923, J. Acuña on *Misanteca trianda* Mez. Paratype ♀, Taco Taco, March 26, 1922, J. Acuña.

In many respects this species is out of place in the genus *Monobelus*. It bears in general appearance about the same relation to that genus that many of our North American species of *Cyrtolobus* bear to *Atymna*. We do not care to describe the genus as new, however, until more specimens are at hand.

Monobelus irroratus n. sp. (Fig. 15.)

This species may be recognized by its small size broad short form, and pale colors.

Head broad, the face about one and one-half times as broad as long, at the anterior margin broadly rounded and distinctly impressed; the whole surface irregularly punctate, the median line distinctly impressed, clypeus prominent. Pronotum broad, short, irregularly punctate, punctures fuscous and prominent; the apex of the posterior process blackish. Scutellum large. Tegmina semi-transparent, the base black and distinctly punctate with a creamy yellow basal fascia. Venter and legs mostly chestnut, more or less clouded with blackish.

Length to apex of tegmina ♀ 5.54, to apex of pronotum 4.30.

Holotype ♀, Camagüey, July 3, 1923, J. Acuña. Allotype 3 ♀ ♀, Camagüey, July 3, 1923, J. Acuña, on *Belaria mucronata* Gris.

This species is somewhat anomalous in the genus *Monobelus*, but it is difficult to find generic characters which will distinguish it.

Brachycentrus gen. n.

This is a genus of small species with a short broad posterior process. It is somewhat closely related to *Amblycentrus* Fowler. It may be readily distinguished, however, by the fact that the base of the clavus and the base of the corium are strongly punctate, and obscurely veined. The apex of the tegmina is semi-transparent with distinct venation. The posterior process is broad, elongate, reaching the apex of the clavus.

Head broad, nearly twice as broad as long; the ocelli widely separated almost touching the basal margin. Pronotum well elevated, produced into triangular processes on either side. Posterior process broad flat, depressed rather obtuse at the apex, almost entirely concealing the scutellum; median carina obscure. Basal half of tegmina except a narrow area along the claval suture thick, opaque, strongly punctate; venation of this area obscure; apex together with the narrow area along the claval suture semi-transparent, venation in this area distinct; five apical cells; three discoidal cells, the outer two nearly equal in size, the inner more elongate. Hind wings with four apical cells. Legs rather slender, hairy; the posterior tibia with two rows of obtuse denticles.

Type of genus *Brachycentrus punctatus* n. sp.

***Brachycentrus punctatus* n. sp.** (Figs. 5, 6.)

This species may be readily distinguished from *hirsutus* by its larger size, more elevated pronotum which is more distinctly punctured, and less hirsute body.

General color pitchy black, varied with pale yellow. Head pitchy black, rugose; vertex nearly twice as wide as the median length. The clypeus produced into a distinct snout-like process. Antennal ledges strongly produced, beak reaching the posterior coxae. Ocelli, far apart, about their own diameter from the basal margin. Pronotum well elevated, deeply punctured, median carinae obscure, lateral angles produced, the dorsal area with three globose elevations caudad, posterior process strongly depressed. Scutellum broad flat almost completely concealed by the posterior process, reaching to about the middle of the posterior process. Venation of the wings typical, basilar area opaque, strongly punctate. The veins on the apical area obscurely irregularly punctate, not hirsute; punctures pitchy black, the areas between irregularly paler. The ventral part of the thorax and the abdomen pitchy black, densely punctured, the punctures on the ventral part of the thorax and the ventral part of the abdomen irregularly placed; these areas densely clothed with pale yellow pile. The punctures on the dorsal part of the abdomen run in regular rows without pile. Legs slender; coxae and trochanters pitchy black; femora pitchy black at the base, yellowish apically; tibia and tarsi yellowish ochre washed with

darker, the spines and the claws blackish; all the legs densely clothed with long pale yellow hairs.

Length, ♀ 3.90 mm.; ♂ 3.40 mm.

Holotype ♂, Pico Turquino, July 22, 1922, S. C. Bruner and C. H. Ballou. Allotype ♀, Pico Turquino, July 22, 1922, S. C. Bruner and C. H. Ballou. Paratypes, one ♂ and one ♀, Sierra Maestra, July 10 to 20, 1922, S. C. Bruner and C. H. Ballou, between 3,500 and 4,300 feet.

***Brachycentrus hirsutus* n. sp.**

This is a smaller and more depressed species than *punctatus*, with the head, pronotum and base of wings clothed with long pile.

Head elongate, the vertex including clypeus nearly as long as the width between the eyes; general surface not rugose, closely punctured and densely clothed with whitish pile; general color blackish. Pronotum broad depressed; the humeral angles not much produced; the apex barely sinuate, but much flattened and distinctly carinate. Whole surface densely and uniformly punctate and clothed with pale yellow pile; general color pale yellowish brown, more or less clouded with blackish especially on the metopidium. Scutellum small. Base of the tegmina opaque, densely punctate and clothed with elongate pile; apex semi-transparent with distinct venation which is irregularly punctate. Whole ventral surface including the femora blackish; tibia brownish; tarsi darker.

Length to apex of tegmina 2.61 mm.; width across humeral angles 1.38 mm.

Holotype ♀, Camagüey, July 30, 1923, on *Bacida buceras* Linn., J. Acuña; Paratypes two ♀♀, Camagüey, July 30, 1923, on *Bucida buceras* Linn., J. Acuña.

***Tolania punctata* n. sp. (Figs. 18, 19, 20.)**

This species is somewhat anomalous in the genus *Tolania* Stål. It differs principally in having a much more elongate face, much more prominent humeral angles, much less prominent dorsal horns, much more elevated prothorax, much more acute scutellum and distinctly punctate venation.

Face elongate with the clypeus as long as the width between the eyes; clypeus distinctly trilobed, prominent; antennal ledges prominent; ocelli nearer the posterior border; median sulcus deeply impressed caudad; general color of the

face yellowish testaceous, clouded with blackish fuscous, and densely clothed with golden pile. Prothorax well elevated, higher than the width of the face between the eyes; humeral angles obtusely prominent; lateral horns represented by lobe-like carinate prominences; dorsal crest strongly elevated, sharply carinate, posterior border truncate, general color yellowish testaceous, more or less clouded with blackish fuscous, carinae distinctly blackish; the whole surface uniformly but lightly punctate and clothed with golden yellow pile. Scutellum as long as broad, anterior portion globose, posterior portion flat and acuminate; general color golden yellow with the lateral angles broadly fuscous, and clothed with scale-like pale yellow pile. Tegmina whitish semi-opaque; basal third distinctly punctate, each puncture bearing a bristle; venation of the apical two-thirds distinct, the veins sparsely dotted with blackish points. Venter of the thorax fuscous, densely clothed with whitish pile. Coxae, trochanters and femora fuscous; tibiae and tarsi yellowish testaceous, ringed with fuscous. Abdomen pale yellowish testaceous.

Length to apex of tegmina 3.35 mm.

Holotype ♀, Camagüey, December 9, 1921; paratypes two ♀ ♀, Camagüey, July 15 to 18, 1923, J. Acuña.

While this species does not seem to belong to *Tolania* it is perhaps better to assign it to that genus until more specimens are at hand.

***Beris quadridentata* Walker (Stratiomyiidae, Diptera).—**

In the British Museum there are several specimens under this name. Two specimens, a male and a female, have been selected as the types. These however are not conspecific. The male is *Beris viridis* Say, having four scutellar spines, as indicated by the specific name, but the female specimen, also bearing a type label, has six spines. The synonymy noted above, pointed out by Osten Sacken (Catalogue, page 44) makes the generic designation *Al-lactina* Curran (Can. Entom., 56: 24) a synonym of *Hemiberis* Enderlein (Mitteilungen Zool. Mus. Berl., 10: 209).—O. A. JOHANNSEN, Cornell University, Ithaca, N. Y.